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Cuckoo for Tent Caterpillars



I approached the front door of Stepping Stones Montessori in East Lansing while struggling to keep upright a large, floppy branch of leaves protruding from a bottle of water. Luckily, a third grade boy was entering in front of me, and I asked him if he could get the door. “What do you have today?” he asked. Then he spotted the large, webby tent at the base of the branch. Over one hundred fuzzy, striped caterpillars rested side-by-side in a continuous mass on its surface.

“Ew, I hate those things!”

“Aw, why?” I asked.

“They kill trees.”

As I walked through the opened door I said, “Well, I’m going to try to get you to like them.” He frowned doubtfully.

Minutes later I was into a lesson for the lower elementary classroom about the ecology of the Eastern Tent Caterpillar. (They receive regular Michigan wildlife-related lessons from me throughout the school year.) As I was packing up my things at the end of the lesson the same boy, without prompting, approached me with a smile and said, “You were right. I like them now.”

I’m sure I am in the minority when I state that I like the Eastern Tent Caterpillar. Obviously, my perspective must extend beyond mere aesthetics. After all, with hundreds of caterpillars taking shelter in the same tent day after day, it soon turns into a dirty, gray sty in the lower crotch of a small tree. Tear one open and a waterfall of peppery droppings cascades to the ground. If the tree is small enough, a scan of its denuded branches generates another knee-jerk judgement, unique to the human perspective: *This is not a good thing*. Granted, if nothing else is known about this insect, disliking it is almost a slam-dunk.

Even its assigned name, Eastern Tent Caterpillar Moth, indicates a broad ignorance about its life cycle. A moth with “caterpillar” in its name? While everyone can recognize the springtime, larval army and the starkly-visible barracks, very few would recognize this insect if it landed in front of them in its adult form. Likewise for the eggs and cocoons.

Unlike the Gypsy Moth, a highly-invasive alien accidentally introduced by man's activities that wreaked havoc on forests through the 80s and 90s, this is a *native* moth. It has always been a key organic piece, among thousands that comprise the complex jigsaw puzzle known as the Eastern Deciduous Forest.

This species' niche involves a close association with a handful of wild fruit-bearing trees – in Michigan, especially the Wild Black Cherry. The eggs, each laid in a mass of hundreds in July along the outer, thin twigs of a fully-foliated cherry, are instinctively laid on the twig itself; not on a leaf. This is as it should be since the eggs will remain dormant through the rest of the summer, through fall and winter, and the first month of spring before they finally hatch – just as fresh soft leaves are beginning to emerge on the cherry.



As with many herbivorous insects with a one-year life cycle, the prevalence of tents of this species can vary markedly between years. In boom years it seems almost every roadside cherry sports a tent or five along with the associated leaflessness, but it makes no sense for a member of a natural community to wipe out the host on which it relies for survival. If a small wild cherry dies from defoliation it is most certainly an exception to the overriding rule. (I'd be hesitant to speak as confidently for the survival of the pampered, greenhouse-started ornamental fruit tree in your yard, though.)

In fact, study any wild cherry tree defoliated now, as the caterpillars reach maximum size. A mass exodus occurs. Each roams its separate way in search of a place to settle, then spins a small, powdery, yellowish cocoon. A few weeks after they have vacated it, the tree appears none the worse for wear. It has successfully sprouted an entirely fresh suit of foliage!

Within a span of only two weeks all tent caterpillars feeding on all wild black cherries at the same latitude will spin cocoons. Naturally, then, about a month later, in early July, nocturnal tent caterpillar moths synchronously emerge to begin the short-lived reproductive stage of their life cycle. The moths are distinctive – cinnamon brown with a pair of thin, white, diagonally-positioned parallel lines on each forewing. This species is a common sight around country lights here through the first half of the month. Individuals mate, then the females lay their shiny, dark, foam-covered egg masses on new cherry twigs before weakening and falling prey to a variety of birds, insects and arachnids.

As it should be, other organisms within the ecosystem respond in a positive way to the spring glut of caterpillars followed by the early summer glut of moths.

Hairs and spines on many lepidoptera larvae act as an effective deterrent to bird depredation. In fact, most species of songbirds are unable to eat them without unpleasant consequences. Exceptions within the Eastern Deciduous Forest are the Black-billed and Yellow-billed Cuckoo – two tropical migrant species that breed in Michigan forests which have digestive systems evolved to allow them to specialize on hairy caterpillar prey. It is certainly no coincidence that their May arrival coincides with the peak of tent caterpillar abundance. Ravenous to refuel from a couple-thousand-mile journey they alight near tents and down caterpillars by the beakful.



The secretive Yellow-billed Cuckoo is more often heard than seen. Photo © Steve Sage.

That given, Cornell Laboratory of Ornithology's Allaboutbirds.org indicates both cuckoos to be experiencing significant rates of decline in our forests. Evidence points to habitat loss as well as a corresponding decline in the abundance of moths and their larvae. These cuckoos are quite secretive birds. Although of medium size with an exceptionally long tail, they have a knack for moving furtively over our heads among and behind the foliage. How would you know they are there? Each has a distinct, repetitive breeding call that is easy to separate from those of other birds in the vicinity. Needless to say



This well-camouflaged Whip-poor-will at rest on a log was found in an Ingham County natural area during migration in early May.

Photo by David Pavlik.

most Michigan citizens never learned their calls, and thus, these birds, when present, go unnoticed - and unconsidered - in virtually all woods, parks and rural backyards.

The Whip-poor-will is also a tropical migrant, but a nocturnal bird that is especially active, feeding and calling at dusk on late spring and early summer nights. Nowadays, many equate its loud, ultra-repetitive call as an auditory symbol of wildness on par with that of a loon. Once widespread throughout the state, a lack of forests over most of the southern half of the Lower Peninsula has rendered them nearly extinct here. To see and hear them reliably requires being present at dusk in increasingly smattered locations from Clare County northward.

The closely-related and similarly-declining Common Nighthawk feeds on flying moths in a spacial niche above the treetops. By contrast, the Whip-poor-will feeds on moths at much lower altitude. From a designated perch on the ground it spots their fluttering silhouettes overhead, dimly-backlit by a dusky sky, then, flies up to snatch them.

Studies of Whip-poor-will nesting behavior reveal that these birds take advantage of a photoperiodic window of opportunity by purposefully timing their egg-laying and incubating about two weeks before the waxing stage of a lunar cycle. Which one? At around the Forty-fifth Parallel you can quite safely count the weeks backward from the full moon nearest to mid-July. With hungry nestlings to feed there is continuous light to spot, catch and feed moths to them all night long.

Like the cuckoos and tent caterpillars, the timing of the Whip-poor-will hatch with the sudden glut of tent caterpillar moths in the forest is, of course no ecological coincidence. I would imagine if there were a reliable way to determine moth species comprising the regurgitated contents offered to Whip-poor-will nestlings tent caterpillar moths would prove to be the runaway staple.

Yet again, ditto to the state of the cuckoos, Whip-poor-will populations, even in the north, show long-term trends toward decline.

Eastern tent caterpillar moths are still common in many areas, but not as abundant as they used to be. Broad spraying programs to eliminate pests like the alien gypsy moth and other perceived nuisances kill far more than the intended target. Nearly every native lepidopteran and its larvae will suffer tremendous losses in any sprayed area. I imagine the same goes for spraying programs to control mosquitoes, gaining in popularity, thanks to sales scare-tactics over your children potentially contracting West Nile Virus, or, soon, Zika Virus. How many more than the target species are being taken out by the toxic fog pushed by the ostensibly friendly, backyard mosquito warrior seen on billboards and in mailbox flyers.

It's a logical ecological principle... As any food source declines - and insect abundance is so critical to so many of our overlooked native avian insectivores - expect the consumers which rely on it to follow.



I can't help but stop and listen when I hear the call of either of the cuckoos - unseen as ghosts - echoing softly through the woods; I thrill and take solace in the mechanical, repetitive whistle of a Whip-poor-will boldly and tirelessly introducing itself on a northern early summer evening; oh, and did I mention that I like the Eastern Tent Caterpillar?

- Jim McGrath

This road-killed Yellow-billed Cuckoo was still warm when we saw it while passing, and Carol picked it up. Besides the bill, note the white, paired tear-drops on the underside of the tail and the rufous patch on its primaries to distinguish it from the Black-billed.

Finding & Rearing Giant Silk Moths

SUNDAY, JUNE 12



Doors open from 1 to 5pm. Admission \$5/person.



The skin of this 5th-Instar Promethea is a beautiful blue-green hue.

At 2pm, attend our presentation, **Finding & Rearing Giant Silk Moths**. The largest, most impressive moths on the continent can be found right here in Michigan, yet, their numbers have declined dramatically over the past few decades. Beautiful photographs enhance this Powerpoint presentation featuring the life cycle and ecology of Cecropia, Polyphemus, Promethea and Luna Moths. Over the past week, females have begun emerging from cocoons, attracting mates, and laying eggs. See huge newly-emerged live moths in the "mating cage," and more!

Then, take advantage of this unique opportunity. All paying participants will receive two Cecropia larvae to rear at home over the summer, along with detailed care instructions. Additional Cecropia larvae will be available on this day only for \$1 each while supply lasts. Fertile eggs or larvae of other species will also be available for sale with complete care instructions. This is an **AWESOME** summer project for enthusiasts of all ages.

As always, come early or stay late to take a guided walk on our trails or to interact with the largest collection of live Michigan reptiles and amphibians in the state, including two unprecedented "grand slams" – all 10 turtles and all 13 frogs found in Michigan! Photo ops galore!



This huge 5th-instar Polyphemus melts into the green leaves that surround it when viewed from below the tree branch.

Raise Giant Silk Moth Larvae this Summer

***A Fantastic
Summer Hobby!
A Unique Gift!***

***Eggs and young larvae
are available for sale
now thru early July.***

***Polyphemus, Cecropia
& Prometheus Moths!***

***4 eggs/larvae (per species): \$12. Additional eggs/larvae \$2 each
while supplies last. Includes detailed care instructions.
Contact us to make purchase arrangements.***



A huge, late 5th-instar Cecropia larva eats more than 10 whole leaves a day!

Around the State in June

- ❖ ***Saturday, June 4: 9am-1pm. MI Reptiles & Amphibians Exhibit; 2pm. Birding by Ear Presentation; Kirtland's Warbler Festival, Roscommon.***
- ❖ ***12pm. Garden Critters Presentation; Leila Arboretum Children's Garden, Battle Creek.***
- ❖ ***3-6pm. MI Reptiles Exhibit; Pumpstock Music Festival, East Lansing. 2pm.***
- ❖ ***Sunday, June 7: 10am-2pm. Giant Silk Moths Exhibit & Guided Birding; Williamston Farmer's Market, Williamston.***
- ❖ ***Saturday, June 11: 10am-2pm. MI Frogs & Snakes Exhibit; Get Outdoors Day, Baldwin.***
- ❖ ***Saturday, June 18: 2pm. Giant Silk Moths Presentation; DeGraaf Nature Center, Holland.***
- ❖ ***Sunday, June 19 10am-2pm. Giant Silk Moths Exhibit, Guided Birding; Williamston Farmers Market.***
- ❖ ***Friday-Sunday, June 24-26: 12-4pm. MI Reptiles & Amphibians Exhibit; Milliken State Park, Detroit River Days.***
- ❖ ***Monday, June 27: 11am. MI Reptiles & Amphibians Presentation; Bath Twp Parks & Recreation.***



ND at Isabella Conservation District's annual Environmental Day for Mt. Pleasant area third graders at a local park.



Catch Us on Coffee Break Monday, June 27

Jim is scheduled to appear on Wednesday, June 27 at 9:45am, discussing giant silk moths and more. The show airs weekdays from 9 to 10am on 89.7 FM. Listen live online at lcc.edu/radio/onair/ or watch it live (or later in the day at 6pm) online at lcc.edu/tv/watch. We'll post a reminder on our Facebook fan page.

A Few Summer Camp Openings Still Remain

***Michigan Herp Atlas Field Camp (MS & HS Students)
July 5-8, 2 spaces available***

***MI Reptiles & Amphibians (10 yrs & older)
July 11-14 session, 2 spaces available
August 1-4 session, 2 spaces available***

***Insect Collecting (10 yrs & older)
August 22-25, 4 spaces available***

Details: <http://naturediscovery.net/pdf/summercamps.pdf>

Hawking, Trump, Climate & the Media

Emily Atkins' May 31 column entitled, *The Media Is Ignoring The Most Important Part of Stephen Hawking's Comments on Trump*, blows the whistle on the media for omitting a critical portion of the interview in which Hawking called human-caused climate change the greatest threat facing America and the world:

<http://thinkprogress.org/climate/2016/05/31/3783216/stephen-hawking-donald-trump-climate-change/>

Still burning fossil fuels and wasting resources even after death? This is the way we'd like to go...

<http://thinkprogress.org/climate/2016/06/02/3783840/burial-companies-want-people-environmentally-responsible-death-life/>

-JM

**[Union of
Concerned Scientists**
Science for a healthy planet and safer world

350.org

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